

### R E M A R K S

Careful review and examination of the subject application are noted and appreciated.

### SUPPORT FOR CLAIM AMENDMENTS

Support for the amendments to the claims can be found in the specification as originally filed, for example, on page 3, line 2 through page 6, line 22; on page 10, lines 14-21; on page 13, lines 16 through page 14, line 4; on page 15, lines 4-20; on page 16, line 18 through page 17, line 3; on page 23, lines 6-13. As such, no new matter has been introduced.

### IN THE DRAWINGS

The objection to the drawings with respect to Figure 8 has been obviated by appropriate amendment and should be withdrawn. The set of diagrams previously labeled as "Figure 8" have been labeled individually as Figures 8A-8D. Support for the labeling can be found in the specification as originally filed, for example, on page 9, line 3 and on page 17, line 13. As such, no new matter has been introduced.

The objection to the drawings under 37 C.F.R. § 1.83(a) has been obviated by appropriate amendment and should be withdrawn. New Figures 10A, 10B and 11 are submitted herewith showing the steps as requested by the Examiner. Support for Figures 10A, 10B

and 11 can be found in the claims as originally filed, for example, in claims 1, 2, 3, and 11-15, and in the specification as originally filed, for example, on page 3, line 2 through page 6, line 22; on page 10, lines 14-21; on page 13, lines 16 through page 14, line 4; on page 15, lines 4-20; on page 16, line 18 through page 17, line 3; on page 23, lines 6-13. As such, no new matter has been introduced.

#### IN THE SPECIFICATION

The objection to the Title has been obviated by appropriate amendment and should be withdrawn. The Title of the Invention has been changed to HIGH DENSITY ANALOG RECORDING USING WRITE SYMBOLS HAVING DISTINGUISHABLE READOUT WAVEFORMS.

The specification has been amended for consistency with the amendments to the drawings. Support for the amendments to the specification can be found in the claims as originally filed, for example, in claims 1, 2, 3, and 11-15, and in the specification as originally filed, for example, on page 3, line 2 through page 6, line 22; on page 10, lines 14-21; on page 13, lines 16 through page 14, line 4; on page 15, lines 4-20; on page 16, line 18 through page 17, line 3; on page 23, lines 6-13. As such, no new matter has been introduced.

CLAIM REJECTIONS UNDER 35 U.S.C. §102

The rejection of claims 3-7, 11-13, 16 and 25-28 under 35 U.S.C. §102(b) as being anticipated by Fuji (U.S. Patent No. 5,537,381) is respectfully traversed and should be withdrawn.

Fuji is directed to a test-writing recording control method, a test writing recording control apparatus and an optical recording medium (Title of Fuji).

In contrast to Fuji, the presently claimed invention (claim 3) provides a method of recording data on a recording medium comprising mapping the data to a set of write symbols wherein each write symbol represents more than one bit of the data and wherein the set of write symbols is defined by: (i) defining a set of variable write parameters, (ii) generating a plurality of candidate write symbols that specify different values for the variable write parameters, (iii) generating a plurality of readout waveforms produced by the plurality of candidate write symbols, (iv) analyzing the readout waveforms to determine a set of distinguishable readout waveforms, (v) selecting selected ones of the plurality of candidate write symbols that correspond to the distinguishable readout waveforms to be included in the set of write symbols and (vi) writing the data to the medium using the write symbols. Claim 16 includes similar limitations. Fuji does not disclose or suggest each and every element of the presently claimed invention, arranged as in the present claims. As such, the

presently claimed invention is fully patentable over the cited reference and the rejection should be withdrawn.

Specifically, Fuji does not appear to disclose or suggest mapping data to a set of write symbols where each write symbol represents more than one bit of the data, as presently claimed. In particular, Fuji presents a test-writing and recording control method that forms a first recording pattern, a second recording pattern, and a third recording pattern in test sections of a magneto optical disc specifically separated from a data section for test writing (see elements 90-97 in FIG. 30 and Abstract of Fuji). Fuji further shows that information recording is done in a separate area of the magneto optical disc (see element 97 in FIG. 30 of Fuji). Since the patterns disclosed by Fuji are used for test-writing recording and the test writing area is separate from the information recording area, it follows that Fuji does not disclose or suggest mapping data to a set of write symbols where each write symbol represents more than one bit of the data, as presently claimed. Therefore, Fuji does not disclose or suggest each and every element of the presently claimed invention, arranged as in the present claims. As such, the presently claimed invention is fully patentable over the cited reference and the rejection should be withdrawn.

Furthermore, Fuji does not appear to disclose or suggest selecting selected ones of a plurality of candidate write symbols

that correspond to **distinguishable readout waveforms** to be included in the set of write symbols to which the data is mapped, as presently claimed. Specifically, Fuji teaches that the test writing patterns are used to set recording conditions so that the difference in the levels of the reproduced signals become minimum (see column 3, lines 64-67 of Fuji). Since Fuji is directed to minimizing the difference in levels of reproduced signals, it follows that Fuji does not disclose or suggest selecting selected ones of the plurality of candidate write symbols that correspond to **distinguishable readout waveforms**, as presently claimed. Therefore, Fuji does not disclose or suggest each and every element of the presently claimed invention, arranged as in the present claims. As such, the presently claimed invention is fully patentable over the cited reference and the rejection should be withdrawn.

Furthermore, with respect to claim 11, Fuji appears silent regarding using matched filtered detection to recover the data, as presently claimed. Specifically, the portion of Fuji cited in the Office Action states that the element 49 in FIG. 10 of Fuji is composed of the repeat pattern level detection means 1, the isolation pattern level detection means 2, the comparison means 3, and the repeat isolation pattern generating means 4, which are shown in FIG. 1 of Fuji. Fuji appears silent regarding any of the blocks of FIG. 1 using matched filter detection, as presently

claimed, to recover data. Furthermore, the Office Action does not present any evidence or convincing line of reasoning why a person of ordinary skill in the field of the invention would consider the operation of element 49 in FIG. 10 of Fuji as being identical to the matched filter detection, as presently claimed (see last two lines of page 6 and page 7, line 1 of the Office Action).

The Federal Circuit has stated that "[a]nticipation requires the presence in a single prior art reference disclosure of **each and every element** of the claimed invention, **arranged as in the claim.**"<sup>1</sup> The Federal circuit has added that the anticipation determination is viewed from one of ordinary skill in the art: "There must be **no difference** between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention."<sup>2</sup> Since Fuji is silent regarding using matched filtered detection to recover the data, as presently claimed, and the Office Action does not present any evidence or convincing line of reasoning why a person of ordinary skill in the field of the invention would consider the operation of element 49 in FIG. 10 of Fuji as being identical to the matched filter detection, as presently claimed, the Office Action does not appear to have met the Office's burden of factually establish a *prima*

---

<sup>1</sup>*Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added).

<sup>2</sup>*Scripps Clinic & Research Found. V. Genentech Inc.*, 927 F.2d 1565, 18 U.S.P.Q.2d 1001, 1010 (Fed. Cir. 1991) (emphasis added).

facie case of anticipation. As such, the presently claimed invention is fully patentable over the cited reference and the rejection should be withdrawn.

With respect to claim 10, Fuji appears silent regarding using a cross correlation coefficient calculation to recover the data, as presently claimed. Since Fuji is silent regarding calculating a cross correlation coefficient to recover data, it follows that Fuji does not disclose or suggest each and every element of the presently claimed invention arranged as in the claims. As such, the presently claimed invention is fully patentable over the cited reference and the rejection should be withdrawn.

Similarly, claim 13 recites a combination of a cross correlation coefficient and using a comparison of a DC level to recover the data. Since Fuji is silent regarding a cross correlation coefficient being calculated to recover data, it follows that Fuji does not disclose or suggest a combination of a cross correlation coefficient and comparison of a DC level to recover data as presently claimed. As such, claim 13 is fully patentable over the cited reference and the rejection should be withdrawn.

Claims 4-13 and 17-29 depend directly from either claim 1 or claim 16 which are believe to be allowable. As such, the

presently claimed invention is fully patentable over the cited reference and the rejection should be withdrawn.

**CLAIM REJECTIONS UNDER 35 U.S.C. §103**

The rejection of claims 8-10 under 35 U.S.C. §103 as being unpatentable over Fuji in view of Pettigrew et al (U.S. Patent No. 4,703,469, hereinafter Pettigrew) is respectfully traversed and should be withdrawn.

The rejection of claims 17-20 and 24 under 35 U.S.C. §103 as being unpatentable over Fuji in view of McNeil et al. (U.S. Patent No. 5,995,305, hereinafter McNeil) is respectfully traversed and should be withdrawn.

The rejection of claims 21-23 and 29 under 35 U.S.C. §103(a) as being unpatentable over Fuji in view of McNeil in further view of Kobayashi et al. (U.S. Patent No. 5,973,333 hereinafter Kobayashi) is respectfully traversed and should be withdrawn.

Claims 4-13 and 17-29 depend directly from either claim 1 or claim 16 which are believe to be allowable. As such, the presently claimed invention is fully patentable over the cited references and the rejection should be withdrawn.

Accordingly, the present application is in condition for allowance. Early and favorable action by the Examiner is respectfully solicited.

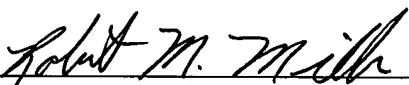


The Examiner is respectfully invited to call the Applicants' representative at 586-498-0670 should it be deemed beneficial to further advance prosecution of the application.

If any additional fees are due, please charge Deposit Account No. 12-2252.

Respectfully submitted,

CHRISTOPHER P. MAIORANA, P.C.

  
Robert M. Miller  
Registration No. 42,892

Dated: April 22, 2004

c/o Leo Peters  
LSI Logic Corporation  
1621 Barber Lane, M/S D-106 Legal  
Milpitas, CA 95035

Docket No.: 03-2454 / 1496.00366